User’s Manual

2008.01.17

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1 About BF-660X/BF-670X SERIES

BF-660X/BF-670X Series is developed to manage entrance security, work place time and attendance, over-work time verification and other situation requiring the presence of the authorized personnel. Our fingerprint ID technology bypasses problems of existing security solutions such as security cards and keypad locks.
BF-660X/BF-670X Series supports various I/O protocols. Within 1 Card Reader, 128 X 64 pixel LCD screen, 10 push buttons, 6 function keys, and 1 buzzer. These equipments make BF-660X/BF-670X SERIES user-friendly.

2 Features

2.1 Characteristics

- **Fingerprint identification enhances security**

  Existing security measures such as security cards system and keypad locks are prone to breach by unauthorized persons through card-duplication or disclosure of set security code. Fingerprint ID system can truly restrict security access only to those authorized persons.

- **Reliable fingerprint ID algorithm**

  Our in-company developed fingerprint ID algorithm has minimized False Rejection Rate and False Acceptance Rate.

- **Entrance security, time and attendance, over-time management and other applications**

  Fingerprint ID system allows for entrance security, work place time and attendance, over-time work. Also, situations that require the presence of the authorized persons at a secured point can take advantage of our fingerprint ID system.

- **Special function keys may be configured to time and attendance and entrance access management**

  4 programmable function keys can be used to manage time and attendance. One BF-660X/BF-670X can be adapted to manage many different kinds of work involving site security control and time and attendance.

- **Low cost of system maintenance**

  Existing IC cards require new issuance of cards with addition of new users and lost of cards. This becomes unnecessary with fingerprint ID system. System maintenance can be lowered to negligible levels when compared to other solutions.

- **Use of stand-alone modules and working in conjunction with an ACU**

  BF-660X/BF-670X entrance control system may be used as stand-alone units to control entrance traffic or in multiple module configurations Utilizing Weigand/RS232/RS485 protocol to contain with an ACU. Also, direct connection to a PC is possible via TCP/IP or RS232/RS485 protocol when software library bundled. Because BF-660X/BF-670X content RTC and log management capabilities (up to 65,000 records), entrance security and other event management are possible without an ACU.

  Besides, BF-660X/BF-670X involves clock on time and record ability (65000 logs at most), so it can be used to entrance security or other stand-alone modules.

- **Expandable and Convenience**

  BF-660X/BF-670X has Chinese Http Server inside, and that makes you revise the setting on line, do wnload data, manage employees and maintain the system conveniently.

  It also reserved sixteen I/O expand points for integrated with other system.

2.2 Support functions

2.2.1 User management

- Register a user, provide 4 type of register (1.Fingerprint 2.Password 3.RFID 4.Fingerprint+Password)
- Support 128 designations and departments for set
- Manager can depend on the real supply situation for the limit period of employee one by one
- Manage the entrance security and time by group
- The status of employee can activate or deactivate
- Supply employee's data, you can check every employee's number, name, status and the way of identification.
- Delete a user or all users

2.2.2 System management

- Chinese Http server inside can use IE to revise the data and manage user on line
- System setting has two security level includes account and password to avoid the setting status revised by a bad intention
- Set terminal ID, title on LCD, description, fingerprint security level, maintenance time, card ID display format, master/slave
- Check the slave data in slave list
- Set communication status on the internet, such as IP Address, Gateway, DNS, Port Number, Host Name

- System clock setup: you can setup clock immediately by your hand or connect to the time server to revise everyday
- Support 40 IN/OUT trigger setup
- Support 16 ring setup
- Backup and restore the user's data directly
- Import all user's list directly on the internet

2.2.3 Door mode

- 255 time set, 255 time zone setup, 200 group list, 100 holiday setup
- Expand 16 reader to process 8 doors' security, time and attendance at most
- You can aimed at some entrance/exit setup location, relay trigger, lock release time zone, exit button time zone, anti pass back level, lock release time and door open delay time by connect to door lock controller or elevator controller
- You can define some entrance/exit, floor, parking area and attendance control by system
- Door status on line
- Configure and read door mode (normal/ forced open/ forced close) by real situation

2.2.4 Log

- Access log: user or employee can query their access log by any computer
- Query by user ID, terminal ID, department, function key and time zone
- Query daily first in/last out for separate user
- Export the IN/OUT log (TXT or XLS) directly on line
- You can use software program to download the log instantly

2.2.5 Authentication

- BF-660X/BF-670X supply 5 authentication ways (1. fingerprint 2. RFID 3. Password 4. Fingerprint+ password 5. fingerprint or password)
- Door access setup finger+ pin time zone, card+ pin time zone

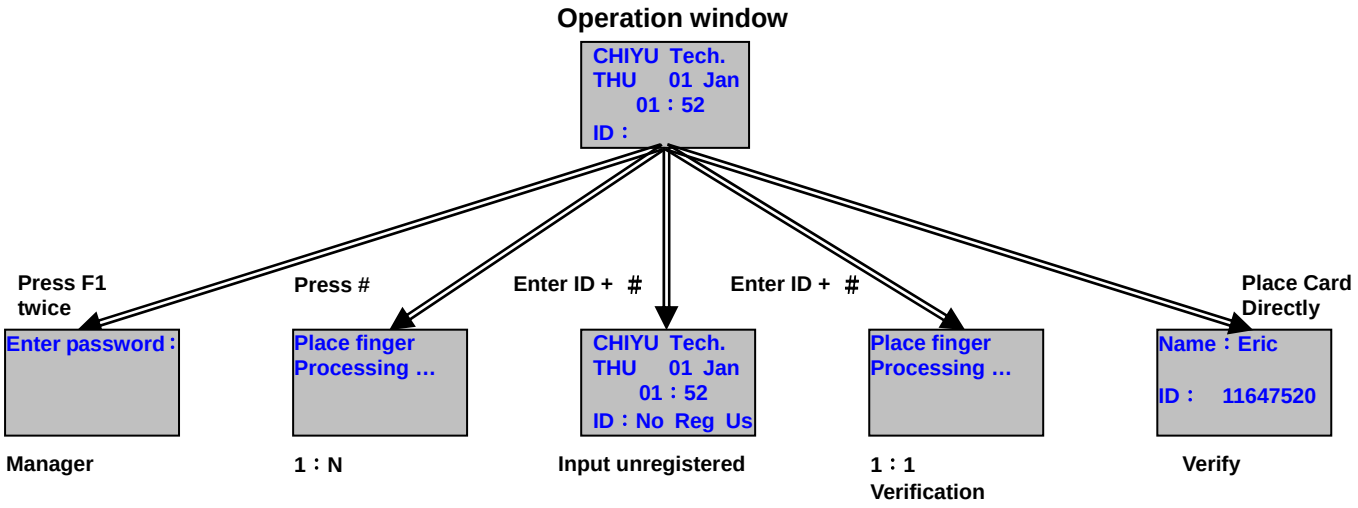
2.2.6 Real time event

- Display user I.D. Name on LCD at authentication time
- Display fingerprint status grade on LCD at authentication time and supply to fingerprint file

2.2.7 Auxiliary function

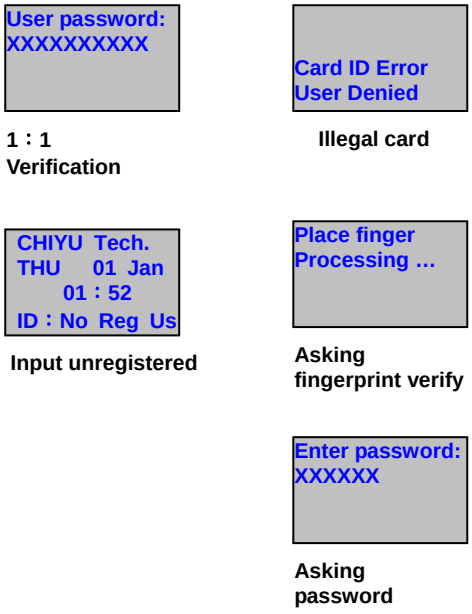
- Exit button
- Relay out (lock driver)

3 Operation window



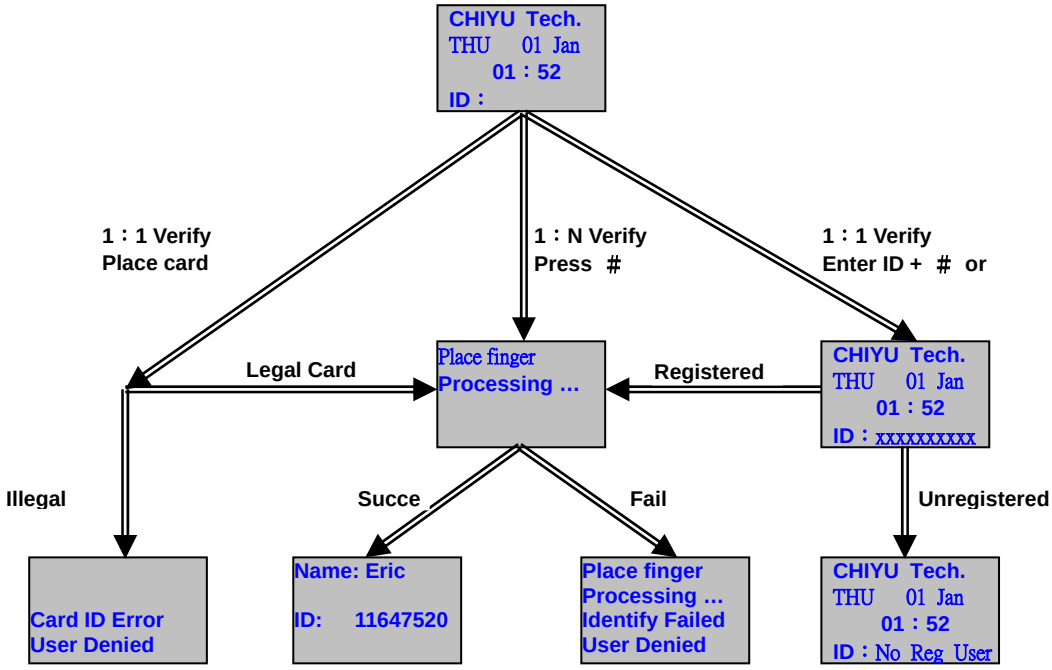
☞ **Function key description :**

- **F1** : Enter Administrator Mode
  Function key for Time & Attendance
- **F2** : Function key for Time & Attendance
- **F3** : Delete (Backspace)
  Function key for Time & Attendance
- **F4** : Function key for Time & Attendance
- **#** : Confirm
- ***** : Cancel
- **0** ~ **9** : Number key



4 User's Menu

4.1 For fingerprint verify user



☞ Operation description :

Method 1 : 1 : 1 verify , max. 5000 users

Place sensor card on the coil directly

Place finger for verify

Method 2 : 1 : N verify , less than 1000 users

[#] Press #

Place finger for verify

Method 3 : 1 : 1 verify , max. 5000 users

[0] ~ [9] Enter ID

[#] [F4] Press # or F4

Place finger for verify

Note : 1. If you use function key please press function Key first

2. If you want to show name on LCD then you must register Name to BF-660X/BF-670X by software

☞ Function key description :

[F1] : Enter Administrator Mode Function key for Time &

[F2] : Function key for Time &

[F3] : Delete (Backspace) Function key for Time &

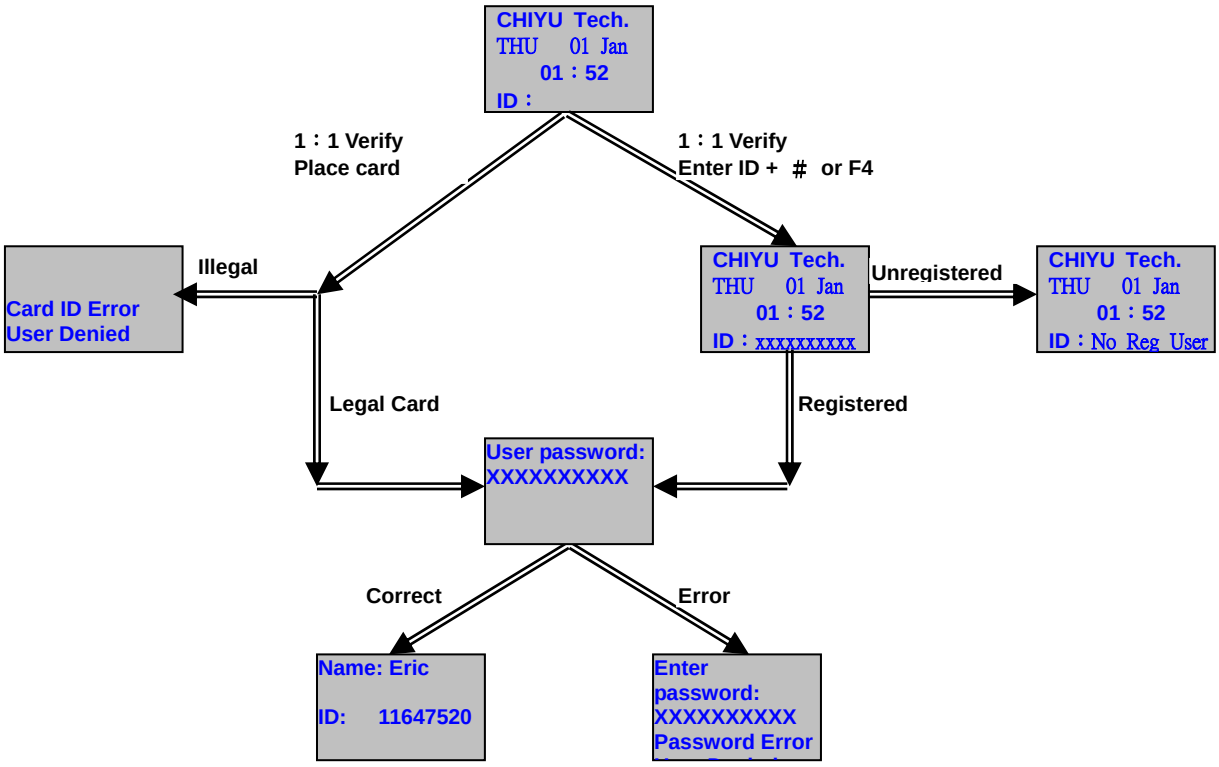
[F4] : Function key for Time &

[#] : Confirm

[*] : Cancel

[0] ~ [9] : Number key

4.2 For password verify user (1:1 verify)



☞ **Operation description :**

1 : 1 verify , max. 5000 users

Method 1 :

[0] ~ [9] **Enter ID**

[#] [F4] **Press # or F4**

[0] ~ [9] **Enter password**

[#] **Press #**

Method 2 :

Place sensor card on the coil directly

[0] ~ [9] **Enter password**

[#] **Press #**

Note : 1. If you use function key please press function Key first

2. If you want to show name on LCD then you must register Name to BF-660X/BF-670X by software

☞ **Function key description :**

[F1] **: Enter Administrator Mode Function key for Time &**

[F2] **: Function key for Time &**

[F3] **: Delete (Backspace) Function key for Time &**

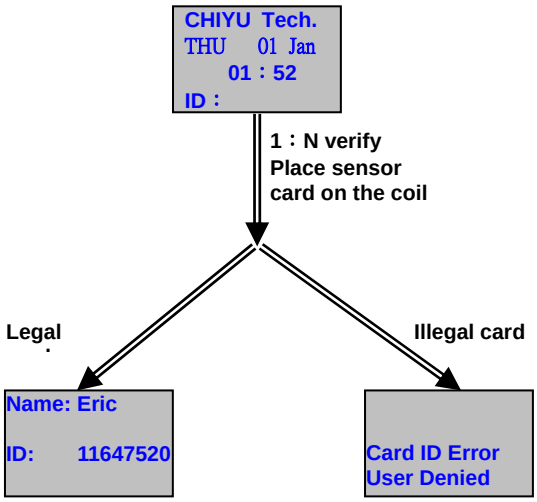
[F4] **: Function key for Time &**

[#] **: Confirm**

[*] **: Cancel**

[0] ~ [9] **: Number key**

4.3 For card verify user (1: N verify)



☞ **Operation description：**

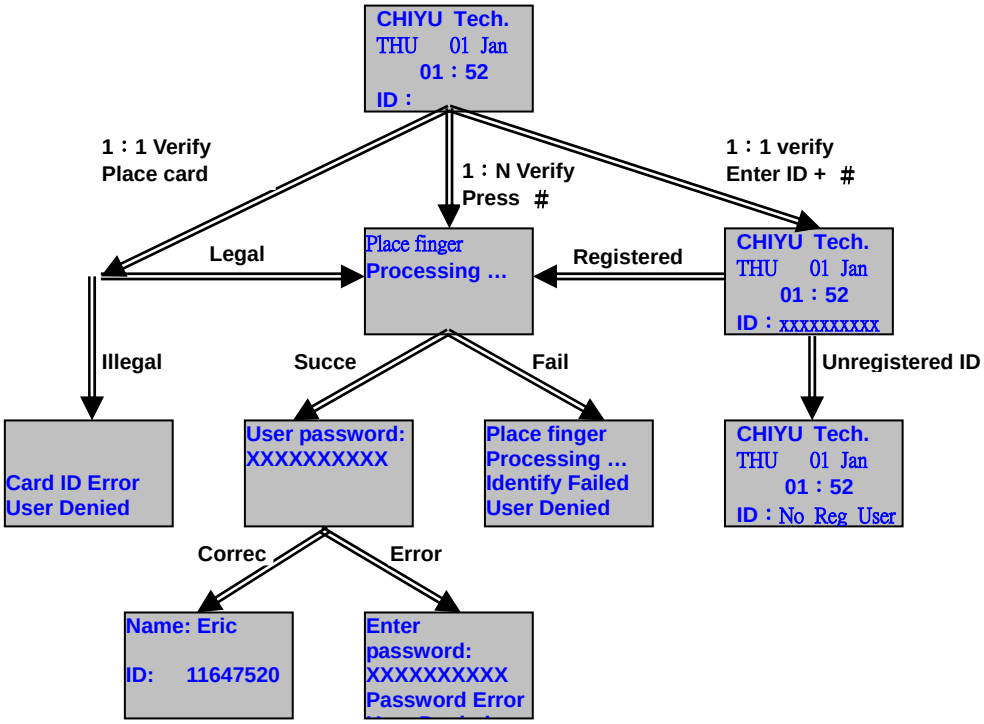
1：N verify，max. 5000 users
Place sensor card on the coil directly

Note：1. If you use function key please press function Key first
2. If you want to show name on LCD then you must register Name to BF-660X/BF-670X by software

☞ **Function key description：**

- **F1** ：Enter Administrator Mode Function key for Time &
- **F2** ：Function key for Time &
- **F3** ：Delete (Backspace) Function key for Time &
- **F4** ：Function key for Time &
- **#** ：Confirm
- **＊** ：Cancel
- **0** ～ **9** ：Number key

4.4 For fingerprint + password verify user



☞ **Operation description：**

Method 1：1：1 verify，max. 5000 users

Place sensor card on the coil directly
Place finger for verify

[0] ～ [9] **Enter password 6～10 digit**

[#] **Press #**

Method 2：1：N verify，less than 100 users

[#] **Press #**

Place finger for verify

[0] ～ [9] **Enter password 6～10 digit**

[#] **Press #**

Method 3：1：1 verify，max. 5000 users

[0] ～ [9] **Enter ID**

[#] [F4] **Press #** or F4

Place finger for verify

[0] ～ [9] **Enter password 6～10 digit**

[#] Press #

Note：1. If you use function key please press function Key first

2. If you want to show name on LCD then you must register Name to BF-660X/BF-670X by software

☞ **Function key description：**

F1 **：Enter Administrator Mode**
Function key for Time &

F2 **：Function key for Time &**

F3 **：Delete (Backspace)**
Function key for Time &

F4 **：Function key for Time &**

**：Confirm**

＊ **：Cancel**

0 ～ **9** **：Number key**

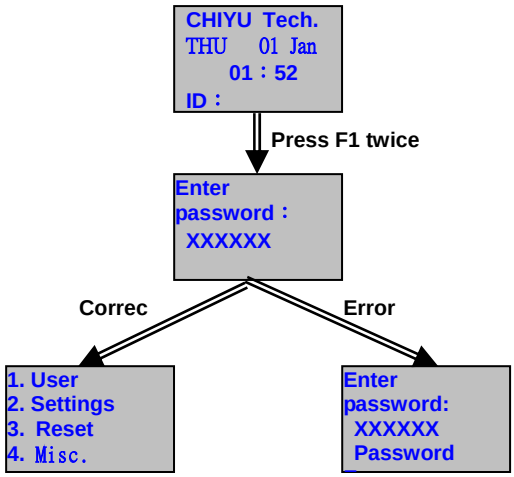
4.5 Fingerprint or Password verify user

Operation is same as **4.1**、 **4.2** and the priority is Password > Fingerprint (for sensor card 1：1 verify).

Enter **“ID + ＃**”will run fingerprint verify,“**ID + F4**”will run password verify.

5 Administrator Menu

Administrator menu allows new user registration and deletion, and system configuration. **Press “F1” twice to enter**。



☞ **Operation description：**

- F1 **Press F1**
- 0 ～ 9 **Enter 6 digit password default value is 111111**
- # **Press #**
- 0 ～ 9 **Press 1～4 to select**
- F1 F2 **Press F1/F2 to Page Up/Page**
- ＊ **Press ＊ to exit**

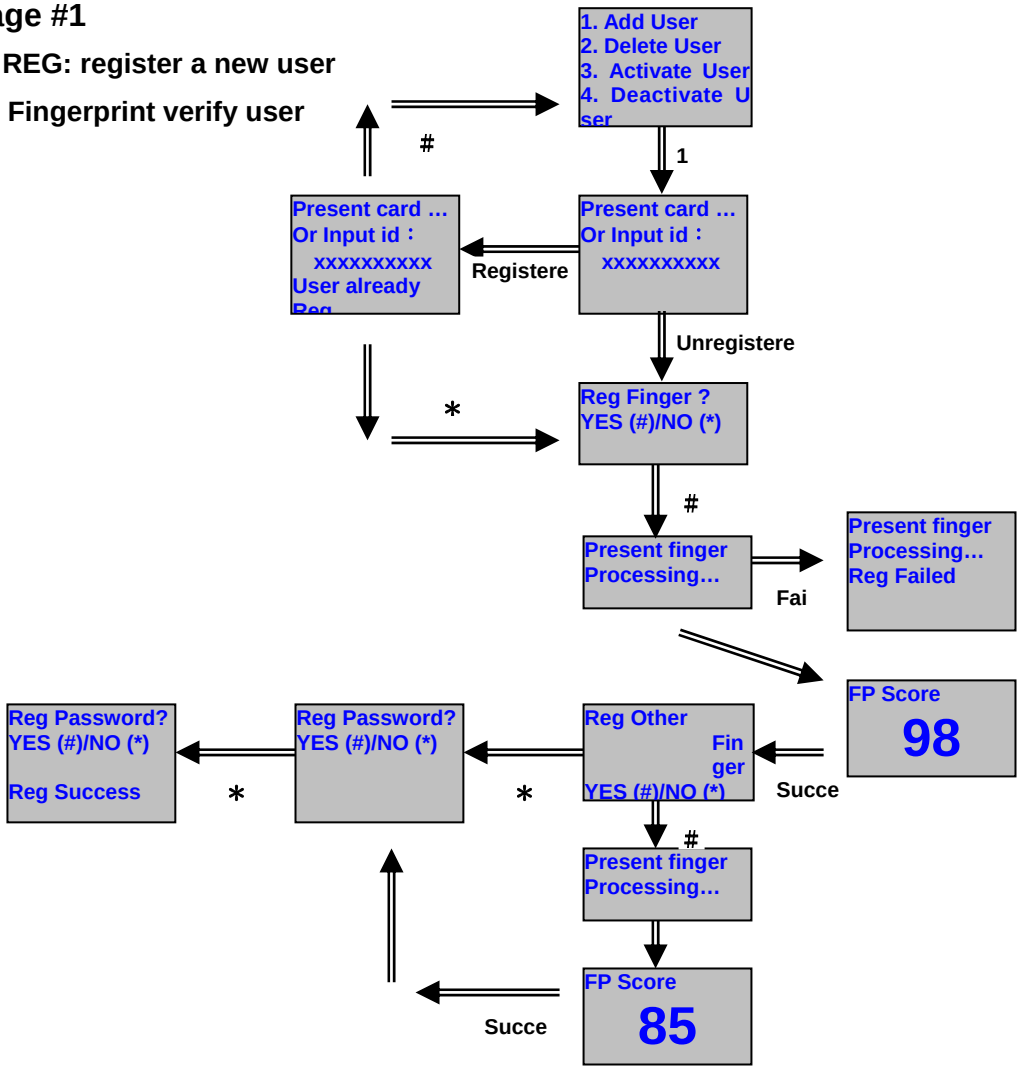
☞ **Function key description：**

- F1 **：Enter Administrator Mode/Page**
- F2 **：Page Down**
- F3 **：Delete (Backspace)**
- F4 **：No use**
- # **：Confirm**
- ＊ **：Cancel**
- 0 ～ 9 **：Number**

5.1 Menu page #1

5.1.1 User REG: register a new user

5.1.1.1 Fingerprint verify user



☞ **Operation description :**

F1 F2 **Press F1/F2 to find User**

0 ~ 9 **Press**

0 ~ 9 **Enter ID or Place sensor card on the**

\# **Press**

\# **Press # to register**

Place finger on the sensor to enroll

\# **Press # to enroll second**

Place finger on fingerprint

* **Press * to cancel password**

☞ **Function key description :**

F1 **: Enter Administrator Mode/Page**

F2 **: Page Down**

F3 **: Delete (Backspace)**

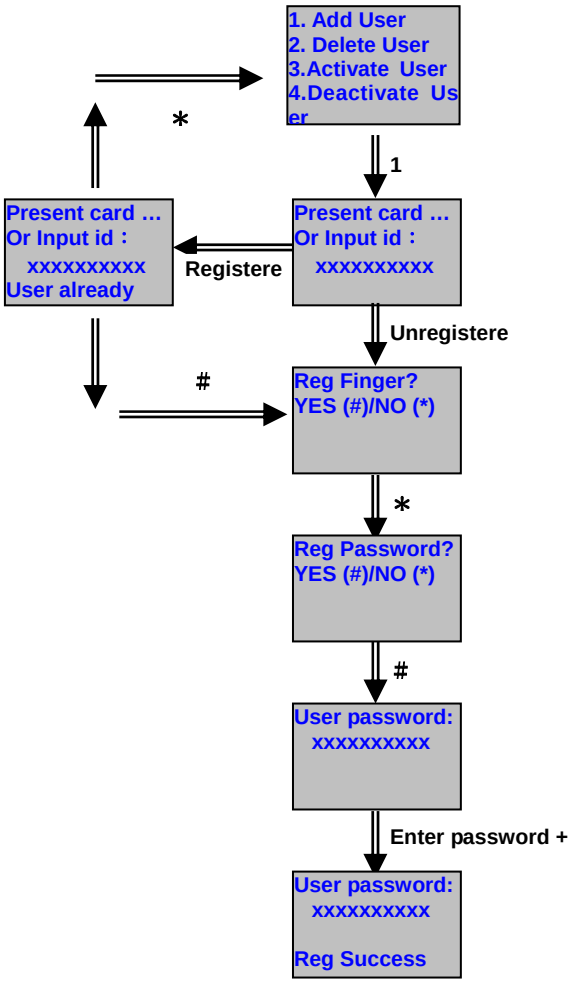
F4 **: No use**

\# **: Confirm**

* **: Cancel**

0 ~ 9 **: Number**

5.1.1.2 Password verify user



☞ **Operation description：**

F1 F2 **Press F1/F2 to find User**

0 ～ 9 **Press**

0 ～ 9 **Enter ID or Place sensor card on the**

Press

* **Press ＊to cancel fingerprint**

Press # to register

0 ～ 9 **Enter password**

Press

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

F2 **：Page Down**

F3 **：Delete (Backspace)**

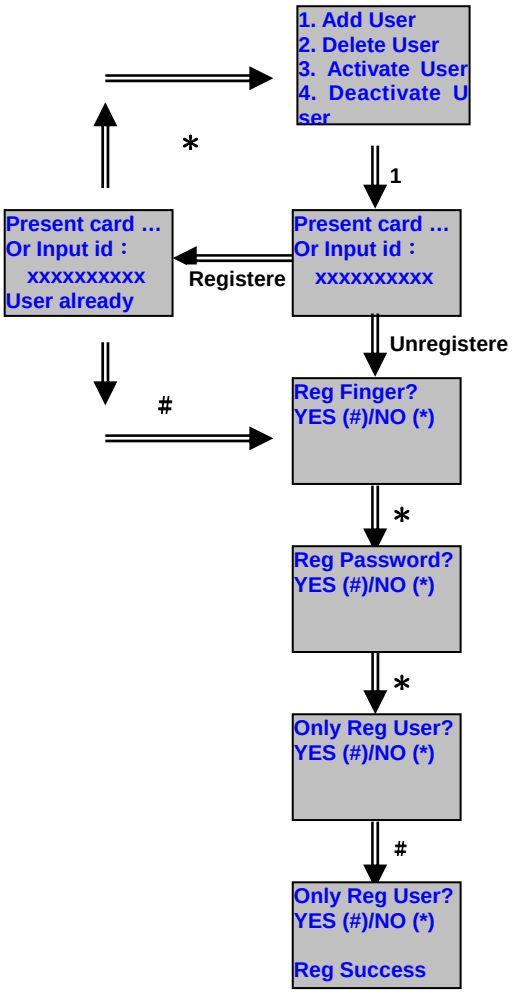
F4 **：No use**

：Confirm

* **：Cancel**

0 ～ 9 **：Number**

5.1.1.3 Card verify user



☞ **Operation description：**

F1 F2 **Press F1/F2 to find User**

0 ～ 9 **Press**

Place sensor card on the

* **Press ＊ to cancel fingerprint**

* **Press ＊ to cancel password**

\# **Press ＃ to**

Note：After register success please modify open Modes to card first, see 5.1.3

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

F2 **：Page Down**

F3 **：Delete (Backspace)**

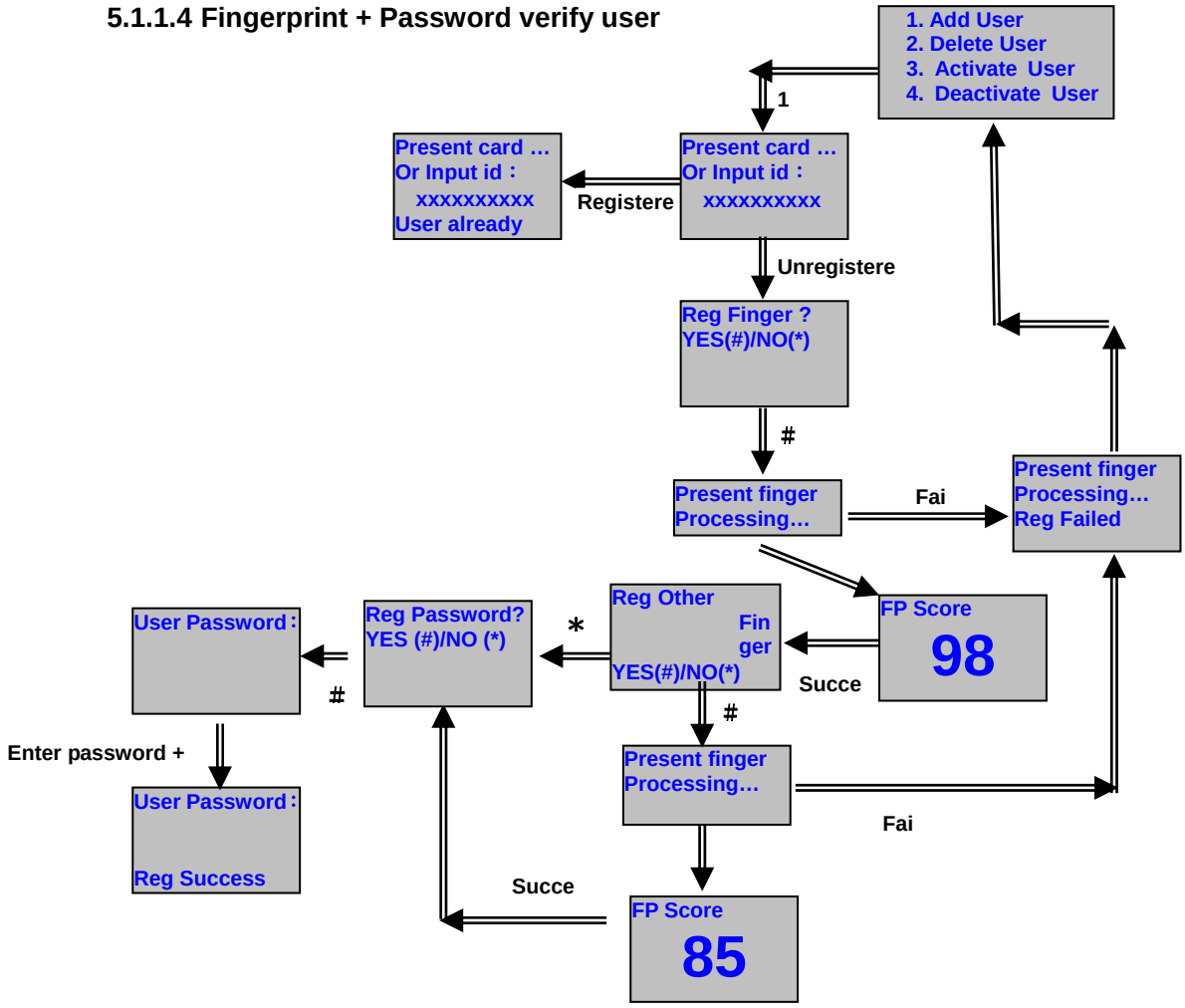
F4 **：No use**

**：Confirm**

***** **：Cancel**

0 ～ **9** **：Number**

5.1.1.4 Fingerprint + Password verify user



☞ **Operation description :**

F1 F2 **Press F1/F2 to find User**

0 ~ 9 **Press**

0 ~ 9 **Enter ID or Place sensor card on the**

\# **Press**

\# **Press # to register**

Place finger on the sensor to enroll

\# **Press # to enroll second**

Place finger on fingerprint

\# **Press # to register**

0 ~ 9 **Enter password**

\# **Press**

☞ **Function key description :**

F1 **: Enter Administrator Mode/Page**

F2 **: Page Down**

F3 **: Delete (Backspace)**

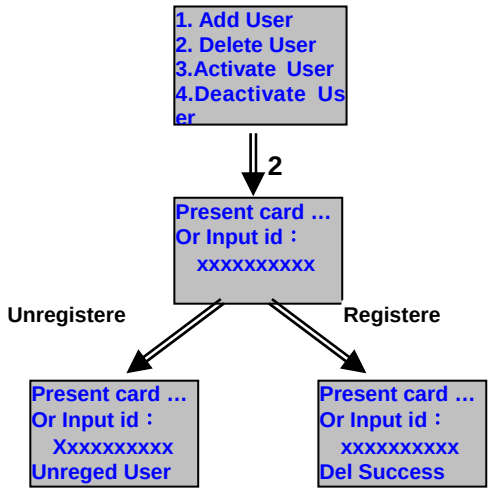
F4 **: No use**

\# **: Confirm**

* **: Cancel**

0 ~ 9 **: Number**

5.1.2 User Del: Del One User



☞ **Operation description：**

0 ～ 9 **Press 2**

0 ～ 9 **Enter ID or Place sensor card on the**

Press

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

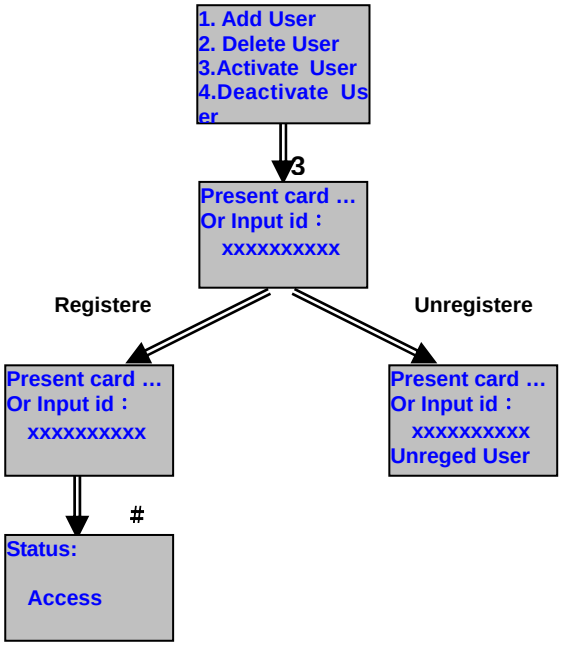
F3 **：Delete (Backspace)**

：Confirm

* **：Cancel**

0 ～ 9 **：Number**

5.1.3 User Set: Set user's verify type



☞ Operation description :

0 ~ 9 Press

0 ~ 9 Enter ID or Place sensor card on the

Press

☞ Function key description :

F1 : Enter Administrator Mode/Page

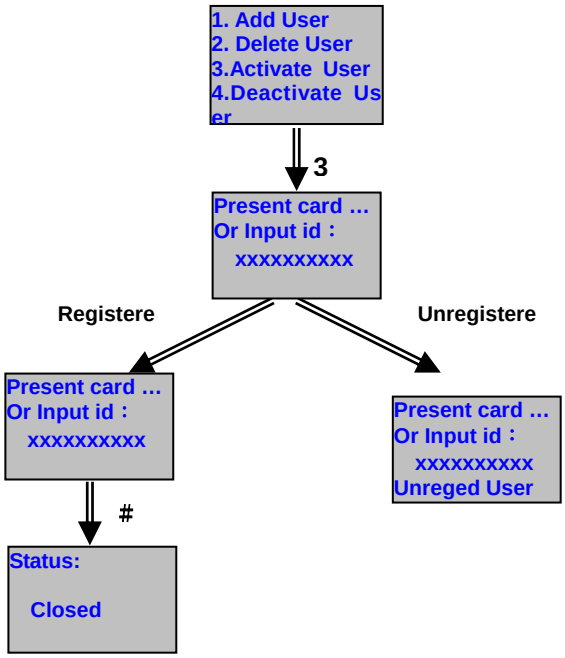
F3 : Delete (Backspace)

: Confirm

* : Cancel

0 ~ 9 : Number

5.1.4 User Closed: Closed user's verify type



☞ Operation description :

0 ~ 9 Press

0 ~ 9 Enter ID or Place sensor card on the

Press

☞ Function key description :

F1 : Enter Administrator Mode/Page

F3 : Delete (Backspace)

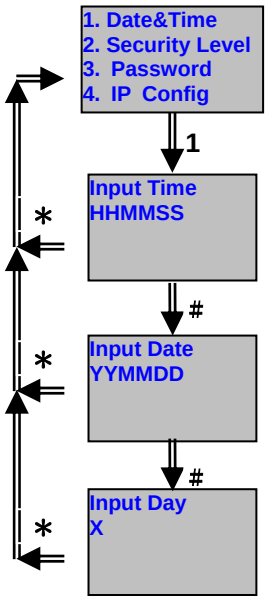
: Confirm

* : Cancel

0 ~ 9 : Number

5.2 Menu page #2

1.1.1 Time: Set time、date and week of BF-660X/BF-670X



☞ **Function key description：**

- F1 ：Enter Administrator Mode/Page
- F3 ：Delete (Backspace)
- # ：Confirm
- * ：Cancel
- 0 ～ 9 ：Number

☞ **Operation description：**

0 ～ 9 Press 1

Set Time

0 ～ 9 Enter time HHMMSS

Press

Set Date

0 ～ 9 Enter date YYMMDD

Press

Set Day

0 ～ 9 Enter week 1～7

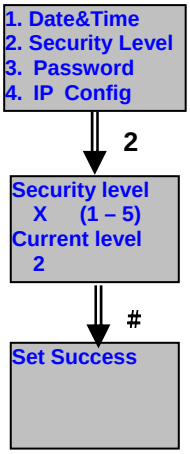
Press

5.2.1 Secure Level: Set system security level

1 2 3 4 5

低 ← → 高

High security level will decrease FAR (false acceptance rate) while increasing FRR (false rejection rate). Oppositely, lower security level will increase FAR while decreasing FRR。



☞ **Operation description：**

0 ～ 9 Press 3

0 ～ 9 Enter level 1～5

Press

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

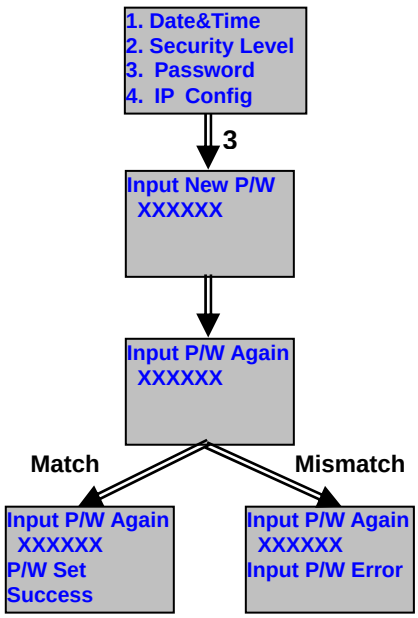
F3 ：Delete (Backspace)

：Confirm

* ：Cancel

0 ～ 9 ：Number

5.2.2 Manager P/W: Change system password



☞ **Operation description：**

0 ～ 9 Press 3

0 ～ 9 Enter 6 digit

Press

0 ～ 9 Enter 6 digit

Press

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

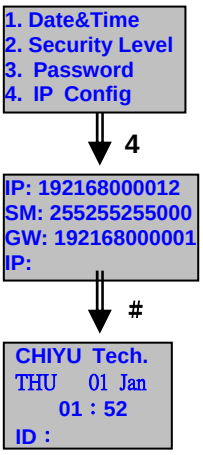
F3 ：Delete (Backspace)

：Confirm

* ：Cancel

0 ～ 9 ：Number

5.2.3 IP Config: Set IP data of BF-660X/BF-670X



☞ **Operation description：**

0 ～ 9 Press 3

0 ～ 9 Enter IP、Subnet mask、Gateway

Press

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

F3 ：Delete (Backspace)

：Confirm

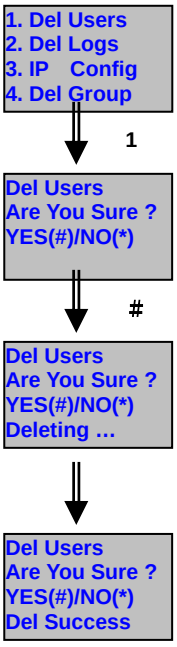
* ：Cancel

0 ～ 9 ：Number

Note：The format of IP、subnet mask and gateway are as follow
If you want to set IP as 192.168.0.12 then enter 192168000012
If you want to set subnet mask as 255.255.255.0 then
enter 255255255000
If you want to set gateway as 192.168.0.1 then enter

5.3 Menu page #3

1.1.2 Del Users: Delete all users



☞ **Operation description：**

0 ～ 9 Press 1

Press

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

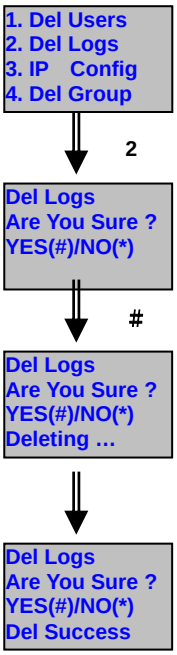
F3 ：Delete (Backspace)

：Confirm

* ：Cancel

0 ～ 9 ：Number

5.3.1 Del Logs: Delete all logs



☞ **Operation description：**

0 ～ **9** **Press 2**

**Press**

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

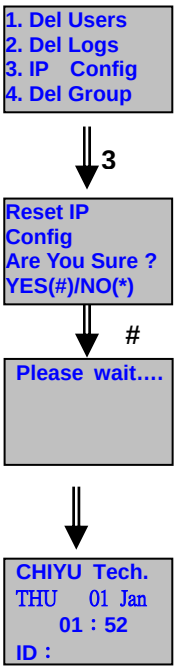
F3 **：Delete (Backspace)**

**：Confirm**

＊ **：Cancel**

0 ～ **9** **：Number**

5.3.2 IP Config: Reset IP



☞ **Operation description：**

0 ～ **9** **Press 3**

**Press**

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

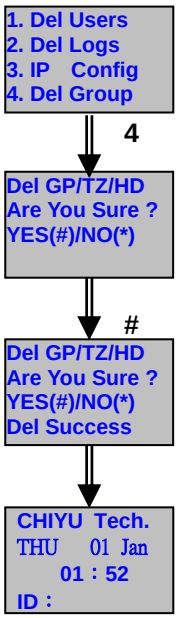
F3 **：Delete (Backspace)**

**：Confirm**

＊ **：Cancel**

0 ～ **9** **：Number**

5.3.3 Del Group



☞ **Operation description：**

0 ～ 9 Press 4

Press

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

F3 ：Delete (Backspace)

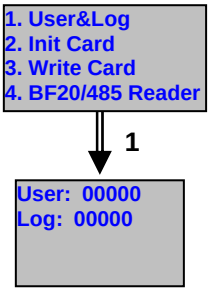
：Confir 0 ～ 9

＊ ：Cancel

：Number

5.4 Menu page #4

5.4.1 User & Log



☞ **Operation description：**

0 ～ 9 Press 1

☞ **Function key description：**

F1 ：Enter Administrator Mode/Page

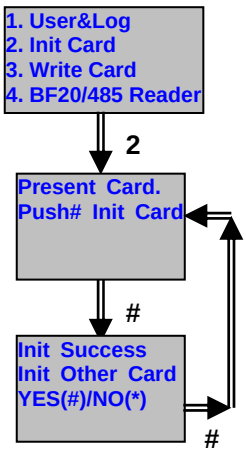
F3 ：Delete (Backspace)

：Confirm

＊ ：Cancel

0 ～ 9 ：Number

5.4.2 Init Card



☞ Operation description：

0 ～ 9 Press 2

Press

☞ Function key description：

F1 ：Enter Administrator Mode/Page

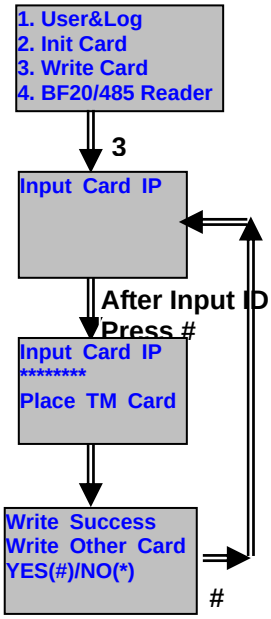
F3 ：Delete (Backspace)

：Confirm

* ：Cancel

0 ～ 9 ：Number

5.4.3 Write Card



☞ Operation description：

0 ～ 9 Press 3

0 ～ 9

After Input ID
Press #

☞ Function key description：

F1 ：Enter Administrator Mode/Page

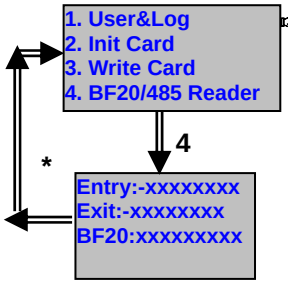
F3 ：Delete (Backspace)

：Confirm

* ：Cancel

0 ～ 9 ：Number

5.4.4 BF20/485 Reader



☞ **Operation description：**

0 ～ 9 **Press 4**

U: represent connect normal
X: represent no connect

☞ **Function key description：**

F1 **：Enter Administrator Mode/Page**

F3 **：Delete (Backspace)**

\# **：Confirm**

* **：Cancel**

0 ～ 9 **：Number**

6 Specifications

6.1 Module Features

- Main board
- Keyboard module
- LCD module
- Finger sensor module
- Build-In Card Reader

6.2 Power Supply

6.2.1 Voltage

- +9V to +30V DC

6.2.2 Current

- Current power consumption: 300Ma, 12V
- Maximum power consumption: 500Ma, 12V

6.3 Environment

6.3.1 Temperature and humidity

- Operating temperature: 0℃ to 55℃
- Storage temperature: -20℃ to 85℃
- Operating humidity: 0% to 95%
- Storage humidity: 0% to 95%

6.3.2 Immunity to electro static discharge

- Serial port 15kv ESD
- Ethernet port 1.5kv

6.4 Communication

- 1 RJ-45 port(10/100M)
- 1 RS-232 port
- 1 RS-485 port
- Meet RS232C、RS485 specifications

6.5 Drivers

- 2 Relay Out (COM, NO, NC)

6.6 Capacity

- 5000 persons with 2 fingerprints/1 card/1 password per person.

6.7 Log entry memory

- 65000 log entries total.

6.8 Dimensions

- BF-660X: 170 mm(H) X 143 mm(W) X 48 mm(D)
- BF-670X: 223 mm(H) X 140 mm(W) X 65 mm(D)

6.9 Weight

- BF-660X: 500g.
- BF-670X: 580g.

6.10 Authentication time

- Average: shorter than 2 second.

6.11 False Rejection Rate

- Less than 0.01%

6.12 False Acceptance Rate

- Less than 0.001%

6.13 Fingerprint data size

- 352 Byte

6.14 Input

- 10 number keys + 6 function keys

6.15 Display

- 1 Buzzer
- 1 LCD: 128 X 64 pixels, 2LED

7 Postscript

7.1 Note

The first thing when you install BF-660X/BF-670X

- Please change the system password first. BF-660X/BF-670X's password is fixed at "111111" initially. It makes a security problem.

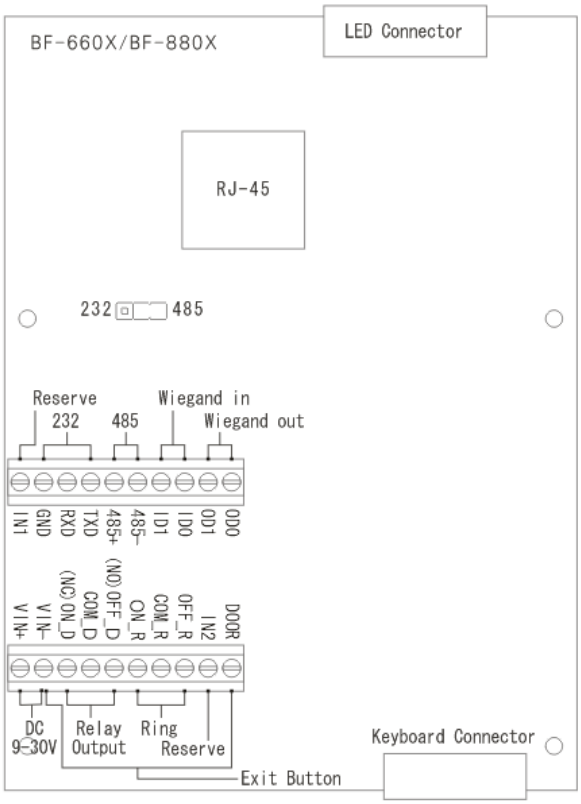
Please do these when you have the problem for verification.

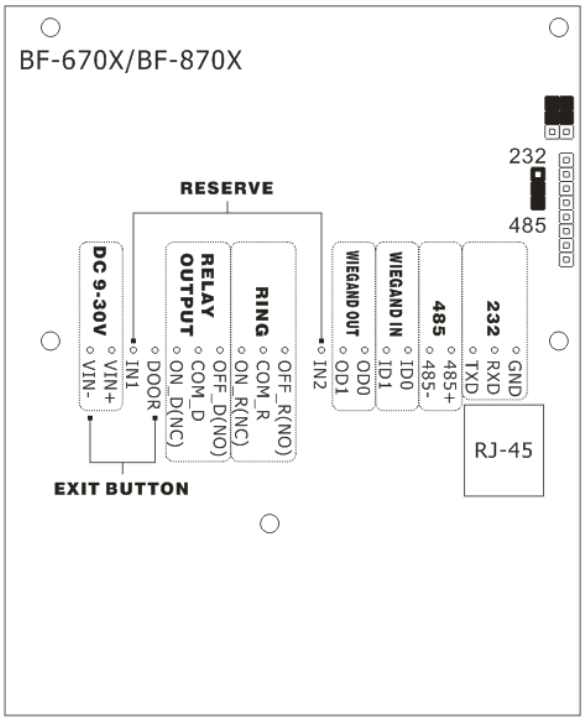
- Cleaning your finger first, then do it again.
- Don't move your finger when you put your finger on the BF-660X/BF-670X's sensor.

Please do these when BF-660X/BF-670X has out of function.

- Power off and power on again, so initialize BF-660X/BF-670X. After initializing BF-660X/BF-670X, if it has same status still, please calls on Chiyu's service center.

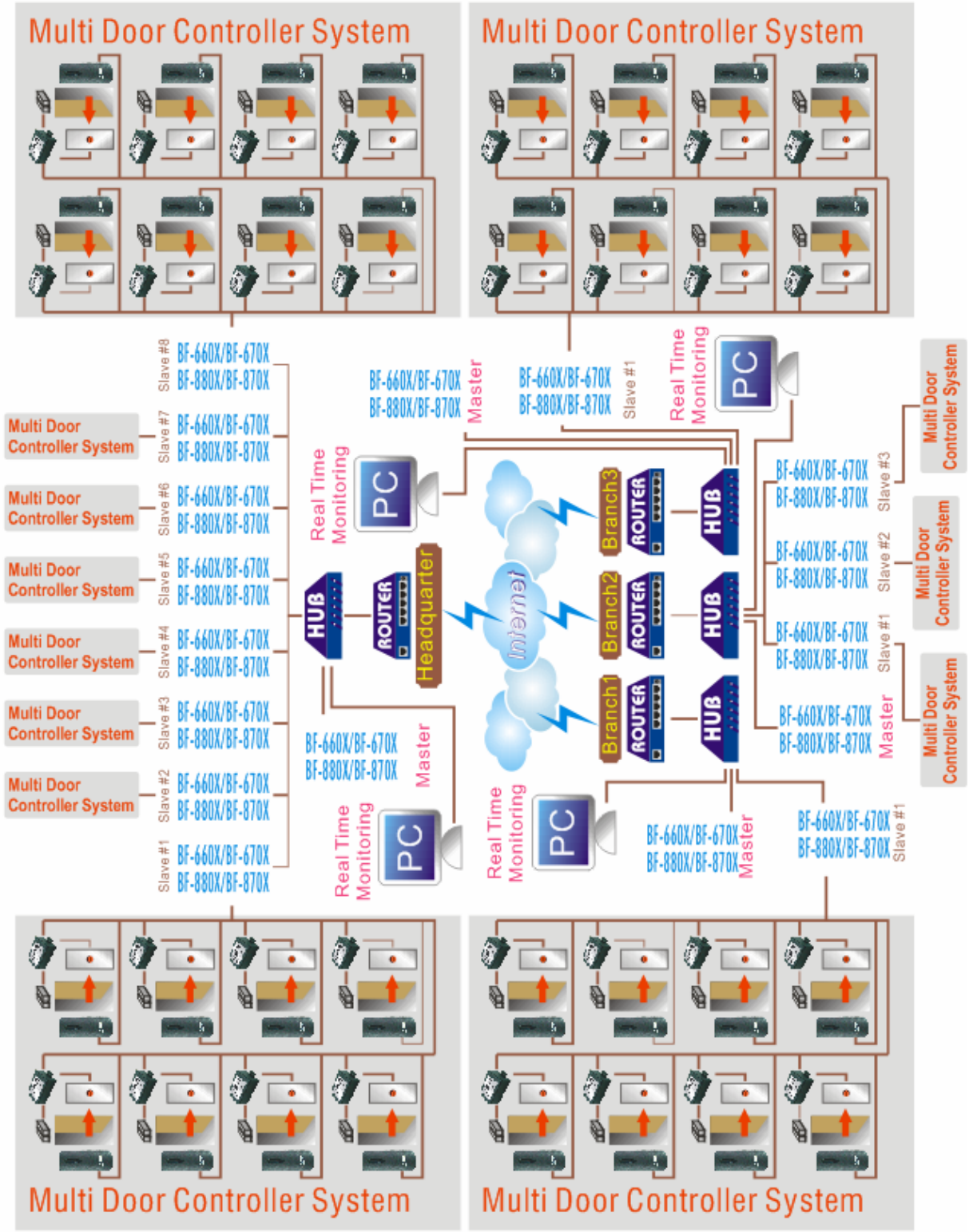
7.2 External connector



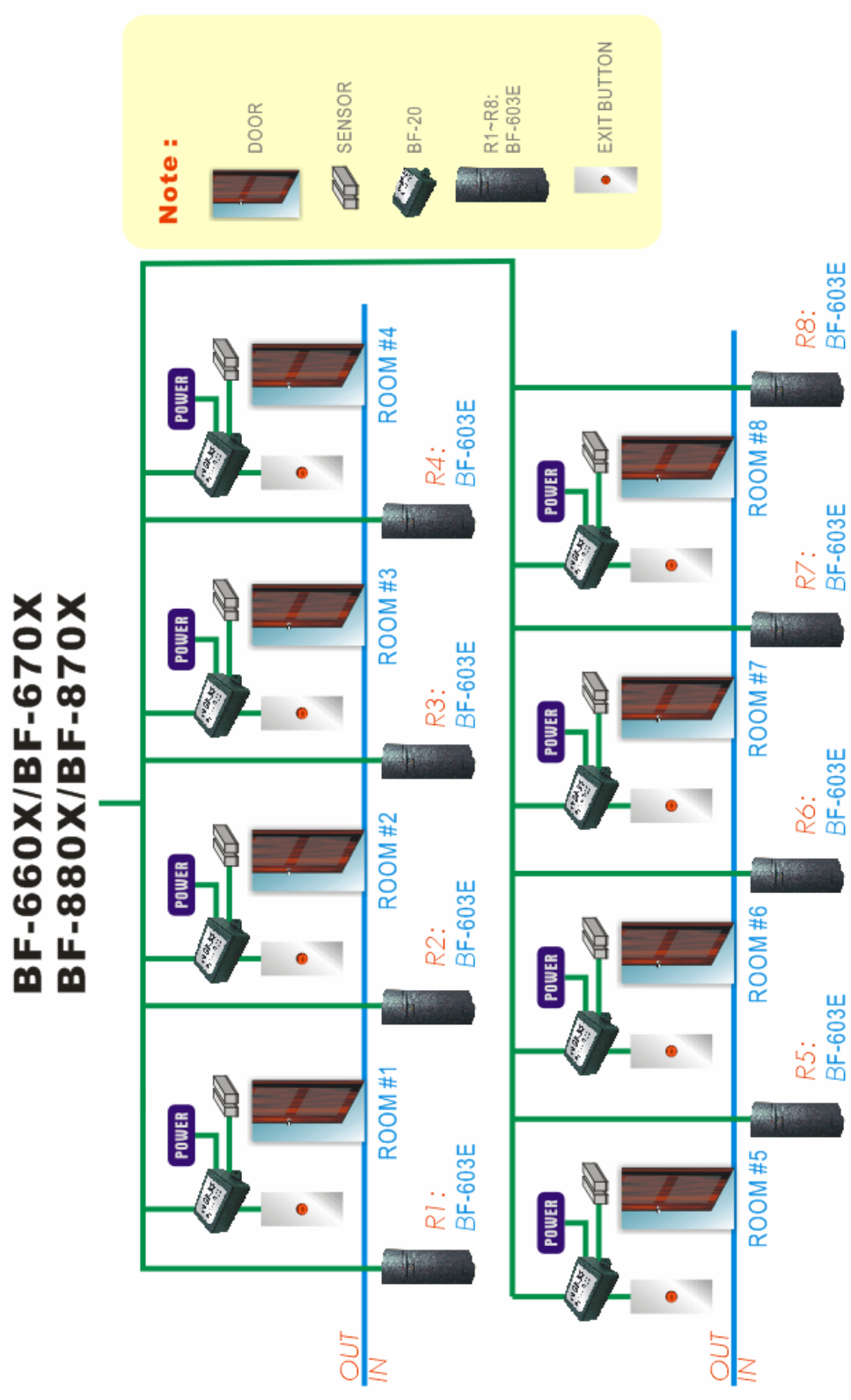


7.3 Connection example

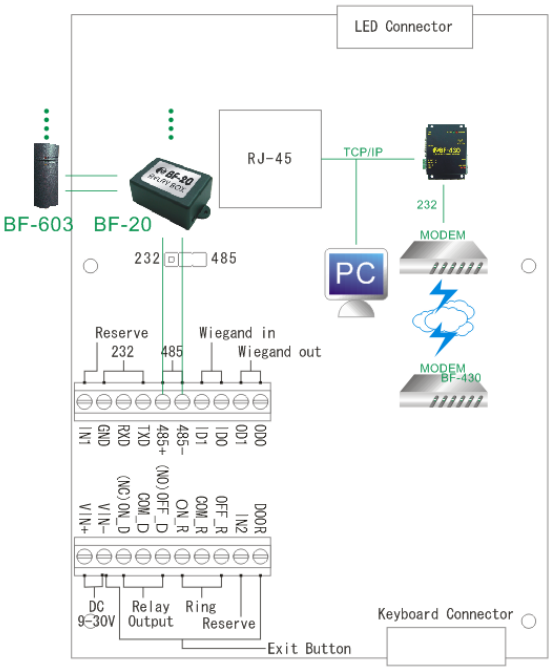
- **Time & Attendance System Application**



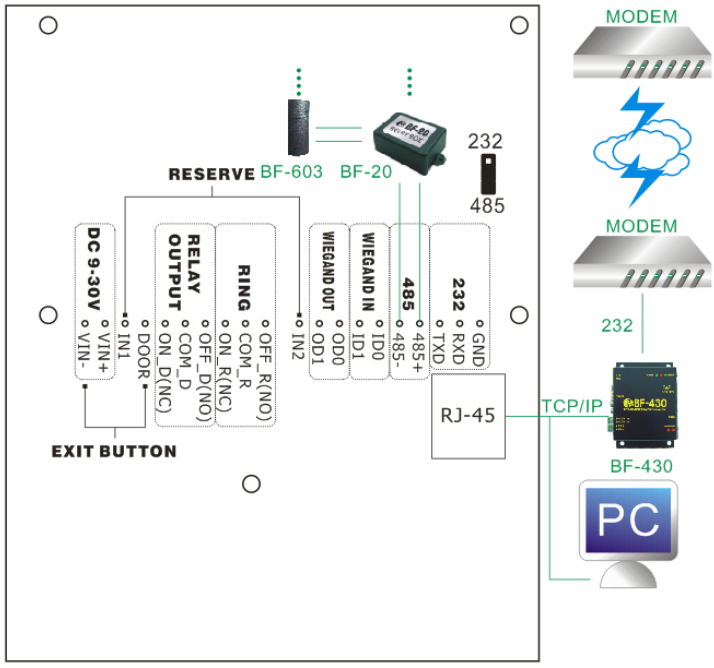
- **Multi-doors Control System Application**



- **485 Connection example**



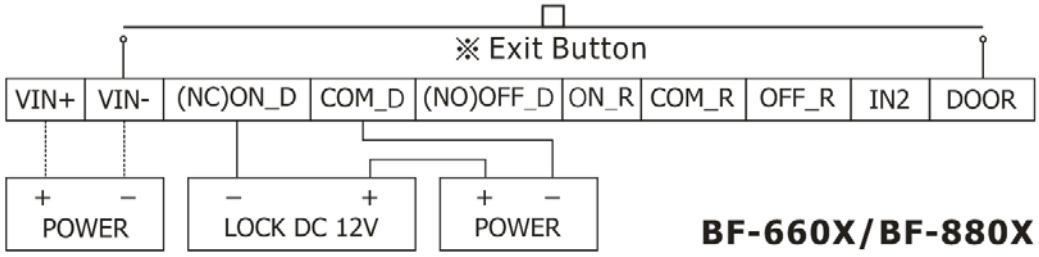
【BF-660X/BF/880X】

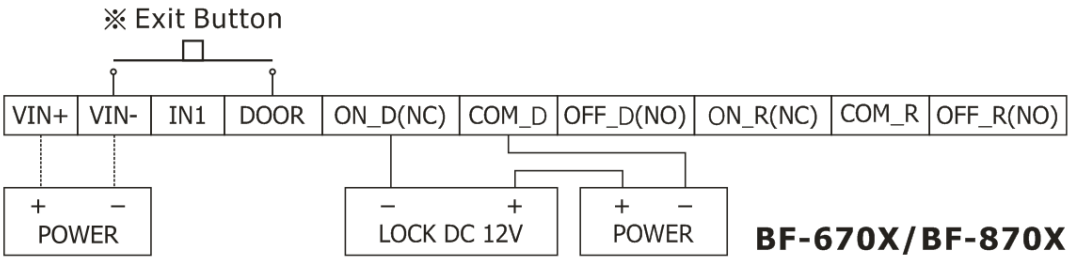


【BF-670X/BF-870X】

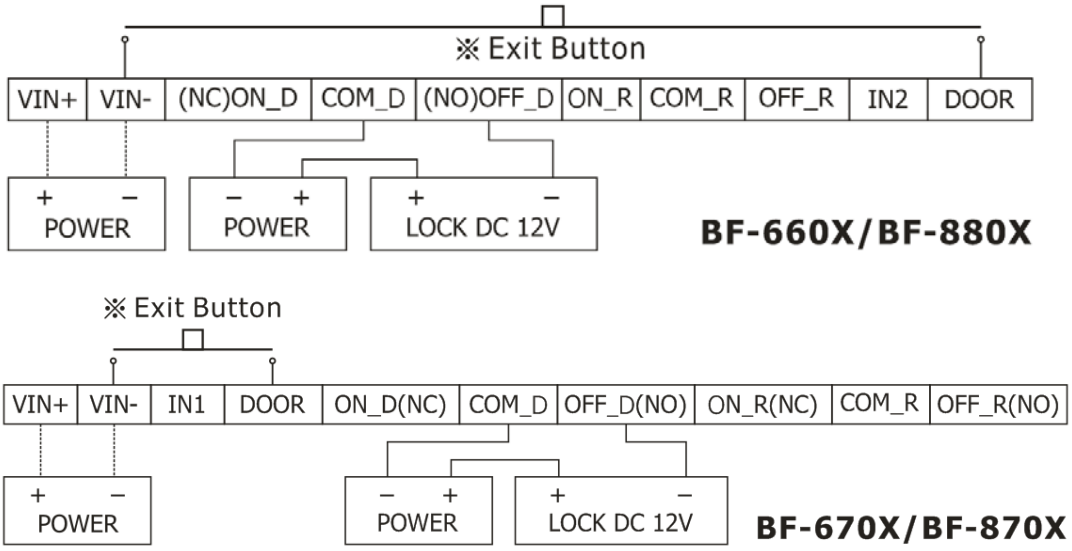
- **Electronic Lock Control**

Lock open when lock is power off





Lock open when lock is power on



- **Fire Alarm**